IN THE CLAIMS

This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method of determining a sought object contour in a digital microscope image, which ~~comprises~~ includes a plurality of image elements and reproduces a biological material, ~~characterized by the steps of~~ the method comprising:

—assigning edge values ~~(91)~~ to at least a first subset of the image elements in the image;

—assigning values of a first gradient vector component ~~(92)~~ whose values each comprise a first linear combination of edge values of some surrounding image elements to at least a second subset of the image elements in the image;

—assigning values of a second gradient vector component ~~(92)~~ whose values each comprise a second linear combination of edge values of some surrounding image elements to at least a third subset of the image elements in the image; and

—calculating an estimate ~~(94)~~ of the sought object contour based upon values of the first and the second gradient vector components.

2. (Original) A method as claimed in claim 1, wherein the first and the second linear combination each correspond to, in arbitrary order, a filtering in the image plane with a 3 by 3 filter and one differentiation in one direction each in the image plane.

3. (Original) A method as claimed in claim 2, wherein the 3 by 3 filter corresponds to a filtering with a weighted combination of a Laplace filter and a unity filter.

4. (Currently Amended) A method as claimed in ~~any of claims 1-3~~claim 1, wherein the first and the second linear combinations are calculated using Fourier transform.

5. (Currently Amended) An arrangement for determining a sought object contour in a digital microscope image, which ~~comprises~~ includes a plurality of image elements and reproduces a biological material, ~~characterized by~~the arrangement comprising:

–means for assigning edge values ~~(84)~~ to at least a first subset of the image elements in the image;

–means for assigning values of a first gradient vector component ~~(86)~~ whose values each comprise a first linear combination of edge values of some surrounding image elements to at least a second subset of the image elements in the image;

–means for assigning values of a second gradient vector component ~~(86)~~ whose values each comprise a second linear combination of edge values of some surrounding image elements to at least a third subset of the image elements in the image; and

–means for calculating an estimate ~~(87)~~ of the sought object contour based upon values of the first and the second gradient vector components.

6. (Currently Amended) A digital storage medium ~~comprising~~ including a computer program for determining a sought object contour in a digital microscope image, which ~~comprises~~ includes a plurality of image elements and reproduces a biological material, when executed on the computer, the program being adapted to cause the computer to perform the following:~~characterized by instructions corresponding to the steps of~~

–assigning edge values ~~(91)~~ to at least a first subset of the image elements in the image;

–assigning values of a first gradient vector component ~~(92)~~ whose values each comprise a first linear combination of edge values of some

surrounding image elements to at least a second subset of the image elements in the image;

—assigning values of a second gradient vector component ~~(92)~~ whose values each comprise a second linear combination of edge values of some surrounding image elements to at least a third subset of the image elements in the image; and

—calculating an estimate ~~(94)~~ of the sought object contour based upon values of the first and the second gradient vector components.

7. (New) A method as claimed in claim 2, wherein the first and the second linear combinations are calculated using Fourier transform.

8. (New) A method as claimed in claim 3, wherein the first and the second linear combinations are calculated using Fourier transform.